APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR		ATTORNEY DOCKET NO.
08/935,844	09/23/97	WILSON	R	E0295/7021

TM21/1105

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EXAMINER
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ART UNIT	PAPER NUMBER
2185	

DATE MAILED: 11/05/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)
	08/935,844	Wilson et al.
	Examiner	Art Unit
	Kimberly McLean	2185

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____*3*____ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will
  be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this
  communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Aug 24, 2001* _____ .

2a) ☒ This action is **FINAL.**   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-32, 34-60, and 62-67* _____ is/are pending in the application.

    4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-32, 34-60, and 62-67* _____ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

    a) ☐ All b) ☐ Some* c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
         application from the International Bureau (PCT Rule 17.2(a)).

    *See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☐ Notice of References Cited (PTO-892)

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

19) ☐ Notice of Informal Patent Application (PTO-152)

20) ☐ Other:

DETAILED ACTION

1.   The enclosed detailed action is in response to the Amendment submitted on August 24,

2001.

Claim Rejections - 35 U.S.C. § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 1-2, 5, 10-12, 19, 39-40, 46-48, 51-52 and 61 are rejected under 35 U.S.C. 103(a)

as being unpatentable over Zarrow (USPN: 5,991,813) in view of the admitted prior art Yanai

(USPN: 5,544,537).

Regarding claims 1, 10-12, 39, 46-47, 51-52 and 61, Zarrow discloses a computer system

comprising a CPU (inherent to a computer; Figure 1, Reference 10); a first storage system that is

coupled to the CPU to store information written from the CPU (Figure 1, Reference 16); a second

storage system (Figure 1, Reference 18); at least one communication link coupling the second

storage system to the CPU, the at least one communication link including a network cloud

(WAN) that is shared with at least one other resource so that no portion of the network cloud is

dedicated exclusively to transferring information between the CPU and the second storage system

(Figure 1, Reference 14; C 2, L 1-3); and a mirror controller responsive to the information being

written from the CPU to the first storage system to mirror at least some of the information written from the CPU to the first storage system in the second storage system by transferring the at least some of the information through the network cloud (C 4, L 41-67; C 5, L 1-35). Zarrow does not explicitly disclose the communication link extending between the first and second storage systems such that the second system is coupled to the CPU via the first storage system. However, Yanai does teach this feature (Figure 1, Reference 40; C 4, L 50-56). Yanai teaches that this feature allows data mirroring from a primary data storage system to a secondary storage system without the intervention of the host which improves the performance of the system (C 2, L 25-33). Yanai also teaches that host (server) intervention seriously degrades the performance of the data transfer link between the host computer and the primary storage device. One of ordinary skill in the art would have also recognized that this feature allows the host to perform other task while the storage controller performs the mirroring operation, thereby improving the performance of the system. Therefore, one of ordinary skill in the art would have been motivated to add the teachings of Yanai to the teachings of Zarrow (remote mirroring over a WAN) for the desirable purpose of improved performance.

Regarding claims 2, 19, 40 and 48, Zarrow teaches a WAN (Internet) (C 2, L 1-3).

Regarding claim 5, Zarrow teaches data mirroring over a WAN. A WAN comprises many resources. The protocol implemented in such a network allows for communication between any of the resources.

Regarding claims 3, 18, 41 and 49, Zarrow teaches the concept of data mirroring over a network (WAN) as cited in claims 1, 39 and 47 above. Zarrow does not explicitly teach an Intranet network. However, mirroring is well known in the art for increased reliability which is a desirable feature in a network. Therefore, it would have been obvious to one of ordinary skill in the art to use the teachings of Zarrow and Yanai in an Intranet network for the desirable purpose of reliability.

4.   Claims 4 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zarrow (USPN: 5,991,813) in view of the admitted prior art Yanai (USPN: 5,54,537) as applied to claim 1 and further in view of Black (Computer Networks: Protocols, Standards and Interfaces, 2nd Edition, 1993).

Zarrow and Yanai teach the limitations cited above in claim 1; however, Zarrow nor Yanai explicitly teach a packet switched and cell network communication link. Yet, it is evident that issues such as applications, cost and other factors would dictate the use of one type of communication link versus another. It is really an issue of design choice. Black teaches in Computer Networks: Protocols, Standards and Interfaces, pages 159 -161, that organizations

with low to medium traffic volumes could benefit from a packet switch network because most of the carriers charge on the volume of traffic. Thus it would have been obvious to one of ordinary skill in the art to use the teachings of Zarrow and Yanai in a packet switch and cell network for a system with low to medium traffic volumes for the desirable purpose of efficiency and cost.

5.　　Claims 6-8, 15-16, 20-21, 42-44 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zarrow (USPN: 5,991,813) in view of the admitted prior art Yanai (USPN: 5,544,537) and Vishlitzky (USPN: 5,960,216).

Zarrow and Yanai disclose the limitations cited above for claims 1 and 39. However, Zarrow nor Yanai explicitly disclose a communication link comprising a plurality of communication paths for parallel transfer of packets. Vishlitzky discloses using a plurality of communication paths for parallel transfer of packets (Figure 3a, Reference 21a-21b; C 4, L 62-67; C 6, L 27-47). It also known in the art to transfer data on parallel paths for increased throughput (such as Packet switch networks). Vishlitzky teaches that this feature enhances reliability by providing more than one path(channel) in case of a failure in one of the channels and this feature increases bandwidth by transferring data on all the channels compared to just a single channel. Thus, it would have been obvious to one of ordinary skill in the art to use a communication link comprising a plurality of communication paths to the system taught by Zarrow and Yanai for increased throughput, reliability and improved system performance.

6.   Claims 9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zarrow (USPN: 5,991,813) in view of the admitted prior art Yanai (USPN: 5,544,537) as applied to claim 1 and further in view of Sparks (USPN: 5,212,784).

Zarrow and Yanai teach the limitations cited above for claim 1, however, neither explicitly teaches a communication link including a wireless connection. Sparks does suggest using a wireless connection as a communication link in a backup/mirroring system (C 7, L 28-36). Sparks teaches that such a configuration would allow transmitting backup/mirroring data offsite immediately thus improving the reliability of the system. It is also well known that wireless connections such as satellites provide a large transmission capacity and improve reliability due to the lack of wires. Thus, it would have been obvious to one of ordinary skill in the art to use a wireless connection in the system taught by Zarrow and Yanai for increased reliability and increased throughput.

7.   Claim 13 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zarrow (USPN: 5,991,813) in view of the admitted prior art Yanai (USPN: 5,544,537) as applied to claim 1 and further in view of Sparks (USPN: 5,212,784).

Zarrow and Yanai teach the limitations cited above in claims 1 and 39, however, neither explicitly teaches a third storage system having a third communication link wherein information from the primary storage unit is mirrored thereto. However, Sparks suggest using a third storage system and a third communication link for coupling the storage device to the CPU as an additional backup systems, wherein some of the information stored in the CPU would be mirrored/copied

thereto (C 7, L 12-36). Sparks teaches that the additional backup system would provide

simultaneous backup copies, thus increasing the reliability of the system (C 7, L 17-20). This

concept is also known in RAID technology. Therefore, it would have been obvious to one of

ordinary skill in the art to add a third storage device and a third communication link for storing

mirrored information of the first storage device to the system taught by Zarrow and Yanai for

increased reliability.

8.   Claims 22-30 and 53-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Zarrow (USPN: 5,991,813) in view of Sparks (USPN: 5,212,784) and the admitted prior art

Yanai (USPN: 5,544,537).

Regarding claims 22, 24-26 and 53, Zarrow discloses a computer system comprising a CPU

(inherent to a computer; Figure 1, Reference 10); a first storage system that is coupled to the

CPU to store information written from the CPU (Figure 1, Reference 16); a second storage

system (Figure 1, Reference 18); at least one communication link coupling the second storage

system to the CPU (Figure 1, Reference 14; C 2, L 1-3); and a mirror controller responsive to the

information being written from the CPU to the first storage system to mirror at least some of the

information written from the CPU to the first storage system in the second storage system by

transferring the at least some of the information over the at least one communication link (C 4, L

41-67; C 5, L 1-35). Zarrow does not explicitly disclose a the at least one communication link

comprising at least one wireless connection. However, Sparks does suggest using a wireless

connection as a communication link in a backup/mirroring system (C 7, L 28-36). Sparks teaches that such a configuration would allow transmitting backup/mirroring data offsite immediately thus improving the reliability of the system. It is also well known that wireless connections such as satellites provide a large transmission capacity and improve reliability due to the lack of wires. Thus, it would have been obvious to one of ordinary skill in the art to use a wireless connection in Zarrow's system for increased reliability and increased throughput. Zarrow nor Sparks explicitly discloses the communication link extending between the first and second storage systems such that the second system is coupled to the CPU via the first storage system. However, Yanai does teach this feature (Figure 1, Reference 40; C 4, L 50-56). Yanai teaches that this feature allows data mirroring from a primary data storage system to a secondary storage system without the intervention of the host which improves the performance of the system (C 2, L 25-33). Yanai also teaches that host (server) intervention seriously degrades the performance of the data transfer link between the host computer and the primary storage device. One of ordinary skill in the art would have also recognized that this feature allows the host to perform other task while the storage controller performs the mirroring operation, thereby improving the performance of the system. Therefore, one of ordinary skill in the art would have been motivated to add the teachings of Yanai to the teachings of Zarrow and Sparks for the desirable purpose of improved performance.

Claim 23 is rejected for the same rationale as applied to claim 3 above.

Regarding claims 27-30 and 54-55, it is well known to use satellites and microwave systems for a

wireless communication link. It would have been obvious to use either for the desirable purpose

of design choice.

9.   Claims 31-32 and 35-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Zarrow (USPN: 5,991,813) in view of Sparks (USPN: 5,212,784) and the admitted prior art

Yanai (USPN: 5,544,537).

Zarrow discloses a computer system comprising a CPU (inherent to a computer; Figure 1,

Reference 10); a first communication link (Figure 1, Reference 32); a first storage system coupled

to the CPU via the first communication link to store information written from the CPU (Figure 1,

Reference 16); a second storage system (Figure 1, Reference 18); a second communication link

coupling the second storage system to the CPU (Figure 1, Reference 14); and a mirror controller

responsive to the information being written from the CPU to the first storage system to mirror at

least some of the information written from the CPU to the first storage system in the second

storage system (C 4, L 41-67; C 5, L 1-35). Zarrow does not explicitly disclose a third storage

system and a third communication link coupling the third storage system to the CPU. However,

Sparks suggest using a third storage system and a third communication link for coupling the

storage device to the CPU as an additional backup systems, wherein some of the information

stored in the CPU would be mirrored/copied thereto (C 7, L 12-36). Sparks teaches that the

additional backup system would provide simultaneous backup copies, thus increasing the

reliability of the system (C 7, L 17-20). This concept is also known in RAID technology.

Therefore, it would have been obvious to one of ordinary skill in the art to add a third storage

device and a third communication link for storing mirrored information of the first storage device

to Zarrow's system for increased reliability. Zarrow nor Sparks explicitly discloses the

communication link extending between the first and second storage systems and the first and third

storage system such that the second system and third storage system is coupled to the CPU via

the first storage system. However, Yanai does teach the concept of extending the communication

link between a primary and secondary (backup) storage systems such that the secondary storage

system is coupled to the host via the first storage system (Figure 1, Reference 40; C 4, L 50-56).

Yanai teaches that this feature allows data mirroring from a primary data storage system to a

secondary storage system without the intervention of the host which improves the performance of

the system (C 2, L 25-33). Yanai also teaches that host (server) intervention seriously degrades

the performance of the data transfer link between the host computer and the primary storage

device. One of ordinary skill in the art would have also recognized that this feature allows the

host to perform other task while the storage controller performs the mirroring operation, thereby

improving the performance of the system. Therefore, it would have been obvious to one of

ordinary skill in the art to add the teachings of Yanai to the teachings of Zarrow and Sparks for

the desirable purpose of improved performance.

Regarding claims 35 and 38, multicasting is known in the art. It is an efficient way of transferring data to simultaneously to multiple devices. Thus it would have been obvious to one of ordinary skill in the art to use multicasting in the system taught by Zarrow and Sparks for the desirable purpose of efficiency.

10.   Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zarrow (USPN: 5,991,813) in view of Sparks (USPN: 5,212,784) as applied to claim 31 above and further in view of Black (Computer Networks: Protocols, Standards and Interfaces, 2nd Edition, 1993). Zarrow and Sparks teach the limitations cited above in claim 34, however, Zarrow and Sparks do not explicitly teach a packet switched and cell network communication link. However, it is evident that issues such as applications, cost and other factors would dictate the use of one type of communication link versus another. It is really an issue of design choice. Black teaches in Computer Networks: Protocols, Standards and Interfaces, pages 159 -161, that organizations with low to medium traffic volumes could benefit from a packet switch network because most of the carriers charge on the volume of traffic. Thus it would have been obvious to one of ordinary skill in the art to use the teachings of Zarrow and Sparks in a packet switch and cell network for a system with low to medium traffic volumes for the desirable purpose of efficiency and cost.

11.   Claims 56-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zarrow (USPN: 5,991,813) in view of Staheli (USPN: 5,537,533) and Yanai (USPN: 5,544,537).

Zarrow discloses a computer system comprising a CPU (inherent to a computer; Figure 1,

Reference 10); a first storage system that is coupled to the CPU to store information written from

the CPU (Figure 1, Reference 16); a second storage system (Figure 1, Reference 18); at least one

communication link coupling the second storage system to the CPU (Figure 1, Reference 14; C 2,

L 1-3); and a mirror controller responsive to the information being written from the CPU to the

first storage system to mirror at least some of the information written from the CPU to the first

storage system in the second storage system by transferring the at least some of the information

over the at least one communication link (C 4, L 41-67; C 5, L 1-35). Zarrow discloses the at

least one communication link consisting of the Internet (Figure 1, Reference 14). Zarrow does

not explicitly disclose the communication link consisting of the Intranet, however, Zarrow teaches

mirroring data over a WAN for improved reliability. The Intranet is a smaller and secured

network system compared to the WAN. However, it is well known in the art, particularly in

networks used at a company, for devices (computers, storages, etc) to communicate over an

Intranet. One of ordinary skill in the art would have recognized the befits of Zarrow teachings

and would have been motivated to use Zarrow's teachings in a system with devices

communicating over an Intranet for the desirable purpose of improved reliability.

Additionally, Zarrow does not disclose the communication link extending between the first and

second storage systems such that the second system is coupled to the CPU via the first storage

system. However, Yanai does teach this feature (Figure 1, Reference 40; C 4, L 50-56). Yanai

teaches that this feature allows data mirroring from a primary data storage system to a secondary

storage system without the intervention of the host which improves the performance of the system

(C 2, L 25-33). Yanai also teaches that host (server) intervention seriously degrades the

performance of the data transfer link between the host computer and the primary storage device.

One of ordinary skill in the art would have also recognized that this feature allows the host to

perform other task while the storage controller performs the mirroring operation, thereby

improving the performance of the system. Therefore, one of ordinary skill in the art would have

been motivated to add the teachings of Yanai to the teachings of Zarrow for the desirable purpose

of improved performance.

12.   Claim 59-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zarrow

(USPN: 5,991,813) in view of Black (Computer Networks: Protocols, Standards and Interfaces,

2nd Edition, 1993) and the admitted prior art Yanai (USPN: 5,544,537).

Zarrow discloses a computer system comprising a CPU (inherent to a computer; Figure 1,

Reference 10); a first storage system that is coupled to the CPU to store information written from

the CPU (Figure 1, Reference 16); a second storage system (Figure 1, Reference 18); at least one

communication link coupling the second storage system to the CPU (Figure 1, Reference 14; C 2,

L 1-3); and a mirror controller responsive to the information being written from the CPU to the

first storage system to mirror at least some of the information written from the CPU to the first

storage system in the second storage system by transferring the at least some of the information

over the at least one communication link (C 4, L 41-67; C 5, L 1-35). Zarrow does not explicitly

disclose the at least one communication link being one of a packet switched and cell switch

network. However, it is evident that issues such as applications, cost and other factors would

dictate the use of one type of communication link versus another. It is really an issue of design

choice. Black teaches in Computer Networks: Protocols, Standards and Interfaces, pages 159 -

161, that organizations with low to medium traffic volumes could benefit from a packet switch

network because most of the carriers charge on the volume of traffic. Thus it would have been

obvious to one of ordinary skill in the art to use the teachings of Zarrow in a packet switch and

cell network for a system with low to medium traffic volumes for the desirable purpose of

efficiency and cost. Zarrow nor Black explicitly discloses the communication link extending

between the first and second storage systems such that the second system is coupled to the CPU

via the first storage system. However, Yanai does teach this feature (Figure 1, Reference 40; C 4,

L 50-56). Yanai teaches that this feature allows data mirroring from a primary data storage

system to a secondary storage system without the intervention of the host which improves the

performance of the system (C 2, L 25-33). Yanai also teaches that host (server) intervention

seriously degrades the performance of the data transfer link between the host computer and the

primary storage device. One of ordinary skill in the art would have also recognized that this

feature allows the host to perform other task while the storage controller performs the mirroring

operation, thereby improving the performance of the system. Therefore, one of ordinary skill in

the art would have been motivated to add the teachings of Yanai to the teachings of Zarrow and

Black for the desirable purpose of improved performance.

13.   Claims 62-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zarrow

(USPN: 5,991,813) in view of the admitted prior art Yanai (USPN: 5,544,537) and Vishlitzky

(USPN: 5,960,216).

Regarding claims 62-67, Zarrow discloses a computer system comprising a CPU (Figure 1,

Reference 10); a first storage system that is coupled to the CPU to store information written from

the CPU (Figure 1, Reference 16); a second storage system (Figure 1, Reference 18); at least one

communication link coupling the second storage system to the CPU, the at least one

communication link including a network cloud (WAN) that is shared with at least one other

resource so that no portion of the network cloud is dedicated exclusively to transferring

information between the CPU and the second storage system (Figure 1, Reference 14; C 2, L 1-

3); and a mirror controller responsive to the information being written from the CPU to the first

storage system to mirror at least some of the information written from the CPU to the first

storage system in the second storage system by transferring the at least some of the information

through the network cloud (C 4, L 41-67; C 5, L 1-35). Zarrow does not explicitly disclose the

communication link extending between the first and second storage systems such that the second

system is coupled to the CPU via the first storage system. However, Yanai does teach this

feature (Figure 1, Reference 40; C 4, L 50-56). Yanai teaches that this feature allows data

mirroring from a primary data storage system to a secondary storage system without the

intervention of the host which improves the performance of the system (C 2, L 25-33). Yanai

also teaches that host (server) intervention seriously degrades the performance of the data transfer

link between the host computer and the primary storage device. One of ordinary skill in the art would have also recognized that this feature allows the host to perform other task while the storage controller performs the mirroring operation, thereby improving the performance of the system. Therefore, one of ordinary skill in the art would have been motivated to add the teachings of Yanai to the teachings of Zarrow for the desirable purpose of improved performance. Zarrow nor Yanai explicitly disclose a communication link comprising a plurality of communication paths for parallel transfer of packets. Vishlitzky discloses using a plurality of communication paths for parallel transfer of packets (Figure 3a, Reference 21a-21b; C 4, L 62-67; C 6, L 27-47). It also known in the art to transfer data on parallel paths for increased throughput (such as Packet switch networks). Vishlitzky teaches that this feature enhances reliability by providing more than one path(channel) in case of a failure in one of the channels and this feature increases bandwidth by transferring data on all the channels compared to just a single channel. Thus, it would have been obvious to one of ordinary skill in the art to use a communication link comprising a plurality of communication paths to the system taught by Zarrow and Yanai for increased throughput, reliability and improved system performance.

Response to Arguments

14.   Applicant's arguments filed have been fully considered but they are not persuasive. In response to Applicant's argument that the Examiner points to no motivation in the prior art of record to make the further modification to the combined system of Yanai and Zarrow to replace

the direct point-to-point communication link that Yanai teaches for communicating between the

two storage systems, the Examiner's position states that Yanai's teachings are added to Zarrow's

teachings. Yanai teaches coupling a secondary storage system to a primary storage via a

communication link, thereby coupling the secondary storage system to a CPU via the primary

storage system for the purpose of mirroring data without intervention of the host. Zarrow

specifically teaches mirroring data through a network cloud (WAN). However, in doing so,

Zarrow allows host intervention (mirroring software on host machine controls the mirroring

operation) wherein the secondary storage is not coupled to the host (CPU) through a secondary

storage system, which Yanai states degrades the performance of the system by overly burdening

the host CPU with the task of writing the data to the secondary storage system and thus

dramatically impacts and reduces system performance (C 2, L 17-25), which suggests the

desirability of using Yanai's teachings. Thus one of ordinary skill in the art would have

recognized the performance benefits of the combined teachings of Zarrow and Yanai and would

have been motivated to add the teachings of Zarrow to Yanai for improved performance. The

Examiner has used the secondary reference for the specific teaching of coupling a secondary

storage system to a host CPU via a primary storage system and not for using a point to point

communication link. Therefore, motivation to replace the direct point-to-point communication

link in Yanai's system is not provided as this feature was not relied upon. It should be noted that

the test for obviousness is not whether the features of a secondary reference may be bodily

incorporated into the structure of the primary reference; nor is it that the claimed invention must

be expressly suggested in any one or all of the references. <u>Rather, the test is what the combined</u>

<u>teachings of the references would have suggested to those of ordinary skill in the art.</u> See *In re*

Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

With regard to Applicant's statement that anyone using Yanai's teachings would have only known

to use a point-to-point communication link, the Examiner disagrees. Anyone of ordinary skill in

the art would have known that Yanai's teachings were directed to connecting a secondary storage

system storage to a primary storage system to perform data mirroring without host intervention

which provides improved performance and one of ordinary skill in the art would have also known

of different implementations of communication links as point to point communication links were

not the only type of communication links known at the time of the invention as is shown in the

teachings of Zarrow.   It is clear that the communication link in Yanai's system functions merely

to couple two systems wherein the type communication link used does not alter the fact that the

secondary storage system is connected to the CPU via the primary storage system and not directly

to the host CPU so that mirroring is performed without intervention from the host CPU.

15.   In response to applicant's argument that the examiner's conclusion of obviousness is based

upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in

a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into

account only knowledge which was within the level of ordinary skill at the time the claimed

invention was made, and does not include knowledge gleaned only from the applicant's disclosure,

such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA

1971).

Conclusion

16.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date

of this final action.

17.   Any inquiry concerning this communication or earlier communications from the examiner

should be directed to Kimberly McLean whose telephone number is (703) 308-9592 (e-mail

address: Kimberly.McLean2@uspto.gov). If attempts to reach the examiner by telephone are

unsuccessful, the examiner's supervisor, Do Yoo, can be reached on (703) 308-4908.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the Group receptionist whose telephone number is (703) 305-9000.

Any formal response to this action intended for entry should be mailed to Commissioner of

Patents and Trademarks, Washington, D.C. 20231 or faxed to (703) 305-9051 and labeled

"FORMAL" or "OFFICIAL". Any informal or draft communication should be faxed to (703)

305-9731 and labeled "INFORMAL" or "UNOFFICIAL" or "DRAFT" or "PROPOSED" and

followed by a phone call to the Examiner at the above number. Hand-delivered responses should

be brought to Crystal Park II, 2021 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

KNM

October 24, 2001
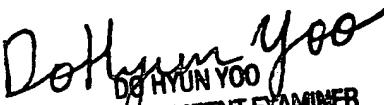
DO HYUN YOO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100